

**Table 513.2.b**  
**BUILDING SCHEDULE PERCENTAGE MULTIPLIERS (cont.)**

**NOTES FOR TABLE 513.2.b**

- (1) Reference: Recommendations for Energy Conservation Standards and Guidelines for New Commercial Buildings, Vol. III, App. A Pacific Northwest Laboratory, PNL-4870-8, 1983. \*
- (2) Table 513.2.b contains multipliers for converting the nominal values for building occupancy (Table 515.2), receptacle power density (Table 516.2) service hot water (Table), and lighting energy (§434.515) into time series data for estimating building loads under the Standard Calculation Procedure. \*
- (3) \*For each standard building profile there are three series - one each for weekdays, Saturday and Sunday. There are 24 elements per series. These represent the multiplier that should be used to estimate building loads from 12 a.m. to 1 a.m. (series element #1) through 11 p.m. to 12 a.m. (series element #24). The estimated load for any hour is simply the multiplier from the appropriate standard profile multiplied by the appropriate value from the tables cited above. \*
- (4) The Building HVAC System Schedule listed in Table 517.1.1 lists the hours when the HVAC system shall be considered "on" or "off" in accordance with §434.514. \*

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**§434.514 Lighting.**

514.1 Interior Lighting Power Allowance (ILPA), for calculating the Energy Cost Budget shall be determined from subsection 401.3.2. The lighting power used to calculate the Design Energy Consumption shall be the actual adjusted power for lighting in the Pro-

posed Design. If the lighting controls in the Proposed Design are more effective at saving energy than those required by subsection 401.3.1 and 401.3.2, the actual installed lighting power shall be used along with the schedules reflecting the action of the controls to calculate the Design Energy Consumption. This actual installed lighting

power shall not be adjusted by the Power Adjustment Factors listed in Table 514.1.

TABLE 514.1—POWER ADJUSTMENT FACTOR (PAF)

Automatic control device(s)	Standard PAF
(1) Occupancy Sensor .....	0.30
(2) Daylight Sensing Continuous Dimming .....	0.30
(3) Daylight Sensing Multiple Step Dimming .....	0.20
(4) Daylight Sensing On/Off .....	0.10
(5) Lumen Maintenance .....	0.10

514.2 Table 513.2.b establishes default assumptions for the percentage of the lighting load switched-on in each Prototype or Reference Building by hour of the day. These default assumptions can be changed when calculating the Energy Cost Budget to provide, for example, a 12-hour rather than an 8-hour workday.

#### § 434.515 Receptacles.

515.1 Receptacle loads and profiles are default assumptions. The same assumptions shall be made in calculating Design Energy Consumption as were used in calculating the Energy Cost Budget.

515.2 Receptacle loads include all general service loads that are typical in a building. These loads exclude any process electrical usage and HVAC primary or auxiliary electrical usage. Table 515.2, Receptacle Power Densities, establishes the density, in W/ft<sup>2</sup>, to be used for each building type. The receptacle energy profiles shall be the same as the lighting energy profiles in Table 513.2.b. This profile establishes the percentage of the receptacle load that is switched on by hour of the day and by building type.

TABLE 515.2—RECEPTACLE POWER DENSITIES

Building type	W/ft <sup>2</sup> of conditioned floor area
Assembly .....	0.25
Office .....	0.75
Retail .....	0.25
Warehouse .....	0.1
School .....	0.5
Hotel/Motel .....	0.25
Restaurant .....	0.1
Health .....	1.0
Multi-family High Rise Residential .....	.....

Included in Lights and Equipment portions of Tables 512.2 a and b.

#### § 434.516 Building exterior envelope.

516.1 *Insulation and Glazing.* The insulation and glazing characteristics of the Prototype and Reference Building envelope shall be determined by using the first column under "Base Case", with no assumed overhangs, for the appropriate Alternate Component Tables (ACP) in Table 402.4.1.2, as defined by climate range. The insulation and glazing characteristics from this ACP are prescribed assumptions for Prototype and Reference Buildings for calculating the Energy Cost Budget. In calculating the Design Energy Consumption of the Proposed Design, the envelope characteristics of the Proposed Design shall be used.

516.2 *Infiltration.* For Prototype and Reference Buildings, the infiltration assumptions in subsection 516.2.1 shall be prescribed assumptions for calculating the Energy Cost Budget and default assumptions for the Design Energy Consumption. Infiltration shall impact perimeter zones only.

516.2.1 When the HVAC system is switched "on," no infiltration shall be assumed. When the HVAC system is switched "off," the infiltration rate for buildings with or without operable windows shall be assumed to be 0.038 cfm/ft<sup>2</sup> of gross exterior wall. Hotels/motels and multi-family high-rise residential buildings shall have infiltration rates of 0.038 cfm/ft<sup>2</sup> of gross exterior wall area at all times.

516.3 *Envelope and Ground Absorptivities.* For Prototype and Reference Buildings, absorptivity assumptions shall be prescribed assumptions for computing the Energy Cost Budget and default assumptions for computing the Design Energy Consumption. The solar absorptivity of opaque elements of the building envelope is assumed to be 70%. The solar absorptivity of ground surfaces is assumed to be 80% (20% reflectivity).

516.4 *Window Management.* For the Prototype and Reference Building, window management drapery assumptions shall be prescribed assumptions for setting the Energy Cost Budget. No draperies shall be the default assumption for computing the Design Energy Consumption. Glazing is assumed to be internally shaded by medium-weight draperies, closed one-half time. The